

March 04, 2016

Tom Moe
USS Corporation
P.O. Box 417
Mountain Iron, MN 55768


RE: Project: NPDES-LINE 3 Wk1
Pace Project No.: 1261855

Dear Tom Moe:

Enclosed are the analytical results for sample(s) received by the laboratory on March 02, 2016. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Melisa M Woods
melisa.woods@pacelabs.com
Project Manager

Enclosures

cc: Terri Sabetti, NTS



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: NPDES-LINE 3 Wk1

Pace Project No.: 1261855

Virginia Minnesota Certification ID's

315 Chestnut Street, Virginia, MN 55792

Alaska Certification #MN01084

Arizona Department of Health Certification #AZ0785

Minnesota Dept of Health Certification #: 027-137-445

North Dakota Certification: # R-203

Wisconsin DNR Certification # : 998027470

WA Department of Ecology Lab ID# C1007

Nevada DNR #MN010842015-1

Oklahoma Department of Environmental Quality

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SAMPLE SUMMARY

Project: NPDES-LINE 3 Wk1

Pace Project No.: 1261855

Lab ID	Sample ID	Matrix	Date Collected	Date Received
1261855001	WS-003 Thickener Overflow	Water	03/02/16 08:45	03/02/16 14:20
1261855002	WS-002 Scrubber Make-Up	Water	03/02/16 08:50	03/02/16 14:20
1261855003	WS-003 Thickener Overflow	Water	03/02/16 08:45	03/02/16 14:20

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SAMPLE ANALYTE COUNT

Project: NPDES-LINE 3 Wk1

Pace Project No.: 1261855

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
1261855001	WS-003 Thickener Overflow	EPA 300.0	DMB	2	PASI-V
1261855002	WS-002 Scrubber Make-Up	EPA 200.7	MAR	3	PASI-V
		EPA 300.0	DMB	1	PASI-V
1261855003	WS-003 Thickener Overflow	EPA 200.7	MAR	3	PASI-V
		EPA 300.0	DMB	1	PASI-V

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ANALYTICAL RESULTS

Project: NPDES-LINE 3 Wk1

Pace Project No.: 1261855

Sample: WS-003 Thickener Overflow		Lab ID: 1261855001		Collected: 03/02/16 08:45		Received: 03/02/16 14:20		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Chloride	528	mg/L	5.0	2.5	5		03/04/16 07:16	16887-00-6	
Fluoride	5.0	mg/L	0.50	0.12	5		03/04/16 07:16	16984-48-8	

Sample: WS-002 Scrubber Make-Up		Lab ID: 1261855002		Collected: 03/02/16 08:50		Received: 03/02/16 14:20		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 MET ICP, Lab Filtered		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7							
Calcium, Dissolved	112	mg/L	5.0	0.29	10	03/03/16 15:15	03/04/16 12:14	7440-70-2	
Magnesium, Dissolved	236	mg/L	5.0	0.67	10	03/03/16 15:15	03/04/16 12:14	7439-95-4	
Total Hardness, Dissolved	1250	mg/L	100	50.0	10	03/03/16 15:15	03/04/16 12:14		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Sulfate	828	mg/L	20.0	0.89	10		03/04/16 07:36	14808-79-8	

Sample: WS-003 Thickener Overflow		Lab ID: 1261855003		Collected: 03/02/16 08:45		Received: 03/02/16 14:20		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 MET ICP, Lab Filtered		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7							
Calcium, Dissolved	996	mg/L	5.0	0.29	10	03/03/16 15:15	03/04/16 12:17	7440-70-2	
Magnesium, Dissolved	7.9	mg/L	5.0	0.67	10	03/03/16 15:15	03/04/16 12:17	7439-95-4	
Total Hardness, Dissolved	2520	mg/L	100	50.0	10	03/03/16 15:15	03/04/16 12:17		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Sulfate	1730	mg/L	40.0	1.8	20		03/04/16 07:56	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: NPDES-LINE 3 Wk1

Pace Project No.: 1261855

QC Batch: MPRP/6556

Analysis Method: EPA 200.7

QC Batch Method: EPA 200.7

Analysis Description: 200.7 MET Dissolved

Associated Lab Samples: 1261855002, 1261855003

METHOD BLANK: 293696

Matrix: Water

Associated Lab Samples: 1261855002, 1261855003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium, Dissolved	mg/L	ND	0.50	0.029	03/04/16 10:59	
Magnesium, Dissolved	mg/L	ND	0.50	0.067	03/04/16 10:59	

LABORATORY CONTROL SAMPLE: 293697

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium, Dissolved	mg/L	50	50.5	101	85-115	
Magnesium, Dissolved	mg/L	50	50.7	101	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 293698

293699

Parameter	Units	1261782001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium, Dissolved	mg/L	86.3	50	50	139	141	106	109	70-130	1	20	
Magnesium, Dissolved	mg/L	245	50	50	300	306	109	121	70-130	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 293700

293701

Parameter	Units	1261787001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium, Dissolved	mg/L	35.1	50	50	86.3	86.5	102	103	70-130	0	20	
Magnesium, Dissolved	mg/L	26.4	50	50	76.4	76.8	100	101	70-130	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: NPDES-LINE 3 Wk1

Pace Project No.: 1261855

QC Batch: WETA/15882

Analysis Method: EPA 300.0

QC Batch Method: EPA 300.0

Analysis Description: 300.0 IC Anions

Associated Lab Samples: 1261855001, 1261855002, 1261855003

METHOD BLANK: 293650

Matrix: Water

Associated Lab Samples: 1261855001, 1261855002, 1261855003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	1.0	0.50	03/04/16 00:26	
Fluoride	mg/L	ND	0.10	0.024	03/04/16 00:26	
Sulfate	mg/L	ND	2.0	0.089	03/04/16 00:26	

LABORATORY CONTROL SAMPLE: 293651

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	50.2	100	90-110	
Fluoride	mg/L	5	5.0	100	90-110	
Sulfate	mg/L	50	49.3	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 293652 293653

Parameter	Units	1261870001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	57.2	50	50	104	104	93	93	90-110	0	20	
Fluoride	mg/L	1.7	5	5	6.4	6.5	96	96	90-110	0	20	
Sulfate	mg/L	20.1	50	50	67.6	67.7	95	95	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 293654 293655

Parameter	Units	1261865001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	72.7	50	50	119	119	93	92	90-110	1	20	
Fluoride	mg/L	3.2	5	5	7.9	7.8	94	92	90-110	1	20	
Sulfate	mg/L	78.9	50	50	126	126	95	93	90-110	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALIFIERS

Project: NPDES-LINE 3 Wk1

Pace Project No.: 1261855

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-V Pace Analytical Services - Virginia

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: NPDES-LINE 3 Wk1

Pace Project No.: 1261855

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
1261855002	WS-002 Scrubber Make-Up	EPA 200.7	MPRP/6556	EPA 200.7	ICP/4973
1261855003	WS-003 Thickener Overflow	EPA 200.7	MPRP/6556	EPA 200.7	ICP/4973
1261855001	WS-003 Thickener Overflow	EPA 300.0	WETA/15882		
1261855002	WS-002 Scrubber Make-Up	EPA 300.0	WETA/15882		
1261855003	WS-003 Thickener Overflow	EPA 300.0	WETA/15882		

REPORT OF LABORATORY ANALYSIS

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Section B

Required Client Information

Required Project Information:

Section C

Invoice Information

Address: USS Corporation

Report To: Tom Moe

Attention:

Address: P.O. Box 417

Copy To:

Company Name:

Mountain Iron, MN 55766

Address:

Email: trnre@usps.com
 Phone: (202) 745-7400

Purchase Order #:

Page Quote:

Requested Due Date: (218)

Project Name:	NPDES-LINE 3 Wkt
Project #:	

Face Project M.

THE UNIVERSITY OF CHICAGO

File #:

Face Profile #:

MO#: 1261855


PM: MMW

CLIENT: His code

Due Date: 03/16/16

Page: 1 Of 1

[illegible]

	Document Name:	Document Revised: 23Feb2015
	Sample Condition Upon Receipt Form	Page 1 of 1
	Document No.: F-VM-C-001-Rev.09	Issuing Authority: Pace Virginia, Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: USS

Project #: WO# 1261855

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☒ Client
☐ Commercial ☐ Pace ☐ Other: _____

Tracking Number: _____

Custody Seal on Cooler/Box Present? ☐ Yes ☒ No

Seals Intact? ☐ Yes ☒ No

Optional: Proj. Due Date: _____ Proj. Name: _____

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☒ None ☐ Other: _____

Temp Blank? ☒ Yes ☐ No

Thermometer Used: ☒ 140792808

Type of Ice: ☒ Wet ☐ Blue ☐ None

☒ Samples on ice, cooling process has begun

Cooler Temp Read °C: 8.4 Cooler Temp Corrected °C: 6.7

Biological Tissue Frozen? ☐ Yes ☐ No ☒ N/A

Temp should be above freezing to 6°C Correction Factor: 0.3

Date and Initials of Person Examining Contents: 3-2-16 CR

Comments: _____

Chain of Custody Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name and Signature on COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time Analysis (<72 hr)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Filtered Volume Received for Dissolved Tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11. Note if sediment is visible in the dissolved containers.
Sample Labels Match COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes Date/Time/ID/Analysis Matrix: <u>WT</u>		
All containers needing acid/base preservation will be checked and documented in the pH logbook.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	See pH log for results and additional preservation documentation
Headspace in Methyl Mercury Container	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13.
Headspace in VOA Vials (>6mm)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Trip Blank Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
Trip Blank Custody Seals Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):		

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? ☐ Yes ☐ No

Person Contacted: _____

Date/Time: _____

Comments/Resolution: _____

FECAL WAIVER ON FILE Y N

TEMPERATURE WAIVER ON FILE Y N

Project Manager Review: Maria Woods

Date: 3/2/16

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)